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Pyro—Pyro and Eikonogen.			
Pyro and Quinol	per botle ...	0	10
Accelerator	„ ...	0	10
Restrainer, Potassium Bromide	...	0	10
Ammonia	...	0	6
Toning	...	0	14
Chloride of Gold	$7\frac{1}{2}$ grs. ...	1	4
Do.	15 „ ...	2	8
Hyposulphite	... per lb. ...	0	5
Pyrogallic acid	... per oz. ...	1	10
Hydroquinone	... „ ...	2	0

&c. &c. &c.

MADRAS, BANGALORE & OOTACAMUND.

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EDITORIAL NOTES.

ALL who use gelatine-coated printing papers cannot feel sufficiently grateful to Messrs. Haddon and Grundy for their demonstration, noticed in the last issue of this journal, that prolonged washing of prints was unnecessary. At the same time it must be remembered that prints if massed together in contact cannot be effectively washed, and, as we all know to our cost, gelatine-coated papers will not stand the rough usage which other papers will bear with impunity. Indeed, in the hot weather, it is difficult to avoid bruising the printed surface even with the most tender care. As the process of washing is practically the process of removal of soluble salts by diffusion, simple soaking without movement of the prints in the water will suffice, but the prints must in this case be changed singly from one water-bath into another, and this of course necessitates constant attention throughout the whole period of washing, which, even during the brief twenty minutes which Messrs. Haddon and Grundy say are sufficient, is apt to become tedious. An arrangement which will therefore keep the prints separate while they soak in water, and will do away with the necessity for handling them, is something to be thankful for. Such an arrangement is brought to notice in the *British Journal of Photography* by Mr. W. B. Bolton and we give the description in his own words:—

"All that is required is a tank or vessel somewhat deeper than the ordinary "deep" porcelain dishes; the washing tanks used for negatives will answer perfectly, but I prefer a deep wooden tray built up of ordinary flooring boards, which, with a very ordinary amount of care and ingenuity, can be made perfectly watertight. This has the advantage that, for a few pence, a tray of large dimensions can be made to accommodate trays which will each hold several prints, and so save the necessity for constructing a large number of individual trays. For the rest, these trays consist of light frames of wood, not necessarily more than a quarter or three-eighths of an inch deep, over which is stretched some sort of netting or open fabric, to convert them into a sort of sieve. A friend of my own uses strips of light cane, fastened together at the corners, Oxford frame fashion, and strung across after the manner of a tennis racquet, with stout ordinary thread. If of large size, these frames may be subdivided into separate cells for each single print; a frame measuring fourteen or fifteen inches square will then hold half a dozen half-plate prints.

"In use the frames are filled with prints and piled one on top of another in the washing tank with a weight of some sort to prevent them floating up. The tank is then filled with water, and the prints left to soak, each one being freely exposed on both sides to the full action of the water. The tank may be provided with a syphon or overflow pipe to allow of a continuous change of water, or it may be emptied bodily at intervals by simply lifting out the whole block of trays and refilling, this plan ensuring a thorough and complete change of water. A very slight movement or agitation of the block of trays will set the water in motion over the whole surface of the prints, both back and front, and, in fact, the washing proceeds in the most thorough manner possible with a minimum of attention.

"Professor Stebbing speaks of the prints being thoroughly washed with a very small

quantity of water if left all night; but, though I do not say this is an injurious length of soaking, it is not desirable at the present season with gelatino-chloride paper, especially if unalumed. Practically I find an hour with a gradually changing current of water, or six or eight changes bodily, at intervals of a few minutes, will effectually remove all soluble salts, and during very hot weather I think it is indisputable that rapid washing, if thorough, is in every way desirable."

In this connection, we would invite the attention of our readers to Mr. Dunsterville's letter, printed in our correspondence column, on the subject of print washing, feeling sure that they will attach to it the importance which his long experience in practical photography entitles it to receive.

IN last December's issue of the *Journal*, we drew the attention of members to the results of experiments with platinotype paper, which Mr. Dunsterville communicated to the Society. He showed that stale platinotype paper could be made to yield good prints, if printed out fully and developed with a very weak oxalate of potash developer. Surgeon-Major VanGeyzel has evidently repeated and confirmed Mr. Dunsterville's results, and he has even "gone one better", for he demonstrated at the last meeting of the Society that stale platinotype paper when fully printed out requires only plain water for development. Certainly a cheaper developer than this it would be difficult to find, especially in monsoon weather when platinotype paper cannot help getting damp. He stated that Mr. Walker's medalled print of "Waiting for Inspiration" was developed in this way upon stale paper, and we have vainly searched the high lights of that print for evidence of previous damp in the paper. He emphasised that the printing can hardly be deep enough. We commend these results to the notice of the unhappy possessors of stale platinotype paper. With rivers in higher flood than the "oldest inhabitant" can remember, railway communications breached in consequence, a western-country Yacht club submerged, and one of our up-country members actually washing prints in rain water (*vide* "Question Box" at last meeting), there is no lack just now of Surgeon-Major VanGeyzel's new "developer."

IN our correspondence column are published two letters, bearing upon the subject of the pictures for the monthly meetings. In one, the writer complains that he does not receive sufficient previous notice of the picture subject, since the post-card intimating it is only sent out a week before the meeting. The obvious reply to this is that the picture subject for the month is announced in the journal which issues on the 15th of each month, thus allowing from two to three weeks' notice. But in order that as long notice as possible might be afforded to members, it was decided at last meeting that the picture subject for the next *two* meetings should be announced every month. This method will ensure six weeks' previous notice, and it is hoped that the decision will meet with the approval of members and that they will now send in pictures to the meetings in larger numbers than hitherto.

The writer of the other letter regrets that criticism of the monthly pictures has been recently omitted from the journal. Now if all exhibitors were of the same mind there would be no difficulty in the matter, but in most cases the exhibitors are unknown personally to those upon whom this difficult duty of criticising falls, and we fear that criticism may have deterred some members from continuing to send pictures and others from venturing to send them at all. Otherwise it is difficult to account for the paucity of members who have recently sent exhibits to the monthly meetings (one in March, two in May, six in June, four in July), or for the non-receipt of prints from some quarters which had unfailingly sent a supply to every meeting. We do not shrink from the duty of criticising, and we shall be glad to re-open a column for criticisms of prints. The Honorary Secretary informs us that in several instances in which criticism has been asked for, it was given privately instead of through the journal.

We earnestly wish that members would make much freer use of the columns of the journal to ventilate their grievances and to make suggestions for the conduct of the Society's affairs. The most advanced radicalism would be more welcome than the present apathetic attitude of many members. Even the choice of the monthly picture subject is left entirely to Madras members, and never a suggestion of one is received from up-country members. It is often a matter of the greatest difficulty to select a suitable subject, one that would be accessible to most members and not too difficult; and Madras members invariably select the

picture subject from the up-country members' point of view. A marine subject for instance has never been chosen as the bulk of the members would be excluded from competition. Suggestions from up-country members are therefore always welcome.

HAVING answered our two correspondents, it is our turn to growl. The Editors of course hold themselves responsible for matter which is printed in this journal, but they are now relieved of much anxiety on this account as they have no more matter to put in! In other words, they have by dint of persuasion, and even threats, squeezed several original articles from members throughout the year—and they would take this opportunity of thanking them—but now the supply consequent upon that pressure is exhausted, temporarily no doubt, for those who have been subjected to this unpleasant process must be given time to again inflate. The Editors must therefore now resort to begging. Will some kind up-country member provide them with an article for next month? In case there should be a much larger number of offers than can be conveniently accommodated in one issue of the journal, please say when sending the article whether it might be held over for another issue! We have hitherto brought out the journal unfailingly and do not in the least fear failure in our endeavours to make bricks without straw; but we only wish it to be generally understood that we shall be pleased if any member will supply a little more of the straw.

We regret that there is no picture ready for issue with this journal; but the fault is not with us who are anxious to receive pictures, but with members who might in this respect at least assist the Editors by offering any pictures for reproduction in the journal. Prize pictures from two half-yearly competitions are not sufficient for twelve issues; and the delays incidental to printing, &c., are beyond calculation. To ensure that every issue has a picture the Editors must have a stock in hand. Such a stock, sufficient to cover four issues, was secured, and the Editors hoped that it would be kept up by additions of new reproductions from members' pictures in place of the sets used up monthly. On the other hand this stock had to be drawn upon and exhausted for want of support from members in this respect also. We hope however to get abreast of requirements again, and in this matter too we specially appeal for contributions of pictures which members wish to have reproduced in the journal.

MR. H. P. ROBINSON'S latest book, entitled *"The Elements of a Pictorial Photograph,"* is before us. We have read it with the greatest pleasure, as indeed we have done almost everything else that this master has written on pictorial work and we come to the conclusion that this latest work of Mr. Robinson's surpasses his previous efforts. There are no descriptions of methods here as in some of his other books, but the relations of photography to art, and the requirements of pictorial photography, are handled with that breadth of treatment which artistic photographers endeavour to infuse into their pictures. The result of his matured thought and experience, the book is full of sound teaching, and perhaps the chapters which would most profit the practical worker are those on 'The Sea,' 'The Sky,' and 'Foregrounds,' which are illustrated by examples of Mr. Robinson's own work. The object of the book in the author's own words are:—"to help the amateur to recognise that there is much more in the art than the taking of a simple photograph, that its materials are only second in plasticity to those of the painter and draughtsman, and that, if they are more difficult to manage, there are effects to which they are even more adapted than other means of art." Mr. Robinson's are strong words, but they express the matured convictions of a strong man. The book is dedicated "To my Brothers of the Linked Ring" which, as our readers know, is the title applied to the band of photographers, having purely artistic aims, who broke away from what the author calls "the apathy and contempt in which photography as a means of pictorial expression was held" and founded a separate institution called the Salon. The entreé into this Ring cannot be obtained by entrance donations, but anyone showing marked artistic ability is liable to be elected by suggestion made from the Ring itself. The book is exceedingly well printed, and reflects great credit on the publishers, Messrs. Percy Lund & Co.

We have received from the same publishers two other books: "*The Elements of Stereoscopic Photography*" by C. F. Seymour Rothwell, and "*The Practical Photographer's First Handbook*" by Mr. Matthew Surface, our distinguished Home Correspondent. The former explains very clearly the principles of

stereoscopic photography and the methods of making prints and transparency slides, and any one taking up this fascinating branch of photography would find this handbook of great assistance. The latter is essentially a beginner's book, and its popularity is testified by the fact that it has reached a ninth edition. It includes just such information regarding apparatus and materials and their manipulation as is required by the beginner, who as a rule finds it difficult to know what not to learn from his text-book. There are beginnings to all things, and this little booklet is an admirable aid to first footsteps in practical photography.

ON ENLARGING.

By H. C. R. Harley.

(Continued from page 90).

Success in making enlargements depends greatly on the care with which every detail is attended to. The utmost cleanliness of all dishes, measures, &c., must be scrupulously observed and the Hypo solution kept apart and not touched till it is wanted for fixing; and when once touched the hands should be carefully washed before meddling with any dish, print, solution, measures, &c. Having ascertained by strips of paper the exposure necessary for the negative to be enlarged, having got your dishes and developers ready, and having exposed the paper, take if off the easel, and first soak it for a minute or two in a tray of plain water, taking care that the whole surface is properly wetted and that there are no air-bubbles. Then take up the paper and lay it face up in the developing dish and pour on the developer, watching carefully, rocking the dish constantly. When the print is fully developed, take it out and wash it in several changes of water till you get rid of all trace of developer, and then fix and rewash carefully till all traces of Hypo are got rid of.

If warmer tints than those obtained with the usual developers are desired, I would recommend the following method which I have found to be very successful; but before using this process be sure that all trace of Hypo has been eliminated; to ascertain this, mix together—

Permanganate of Potassium ...	2 grains
Carbonate of Potassium ...	20 grains
Distilled water ...	1 ounce.

A purple coloured solution will be formed, and add 2 or 3 drops of this to 4 ounces of clean water in a glass measure. If a few drops of the water in which the print was last washed is added to this, should any hypo be present the water in the measure will turn green; if so, more washing of the print is wanted.

After washing, the print should be dried.

To tone, mix together—

Glacial Acetic Acid	200 minims
Ferridcyanide of Potassium ...	16 grains
Nitrate of Uranium	16 grains
Distilled Water	24 ounces

Pass the print into this quickly and with a brush go over its surface so that the solution moistens the whole picture and breaks up all bubbles, the print will soon begin to change colour. As soon as the desired colour is obtained, take the print out and wash it, constantly changing the water till the lemon yellow of the whites has disappeared, then blot the surface of the print with clean white blotting paper and hang it up to dry in the dark room. This surface drying of the prints after washing is important, otherwise the moisture by irregular drying will cause the toning to appear in patches.

This toning should be done in day-light and not in the dark room where the watching of the disappearance of the yellow colour will be difficult.

In developing enlargements on Bromide paper, I have found the Rodinal and the Amidol developers very successful, and these I give together with several others which are well recommended, any of which properly used will not disappoint the worker. When working with Rodinal, I mix Rodinal one part with distilled water 80 parts. If the picture is over-exposed, a few drops of a 10 per cent. solution of Bromide of Potassium may be necessary. Amidol I use either as the makers' direct, or as given further on; it is one of the best developers for Bromide paper that I know of. The makers' formula is—

Make up the following stock solution :—

Amidol 20 parts, Sodium Sulphite 200 parts, Distilled Water 1000 parts.

Dissolve the Sodium Sulphite first, then add the Amidol. To develop:—to one part of above add four parts of water; a few drops of a 10 per cent. solution of Bromide Potassium can be added if over-exposure is feared. When using either of these or Metol as a developer an Acid Fixing Bath should be used, made by dissolving 5 parts of Sulphite of Soda in 100 parts of water, acidulated with one part of pure Sulphuric Acid, to which is added 20 parts of Hyposulphite of Soda.

The Amidol developer as recommended in the International Annual of Anthony's Photographic Bulletin is, Amidol 40 grains, Bromide Potassium 10 grains, Sulphite Soda 480 grains, Distilled Water 10 ounces—mix. Give the picture full exposure. This gives a soft picture, full of detail, and of a good colour. Stop development before the image has quite gained full density required, then wash and fix; the acid bath is not necessary; the ordinary one of 4 parts of Hypo. in 20 parts of water can be used.

Developer recommended by Mr. Dresser—

Eikonogen 1 ounce, Sulphite of Soda 4 ounces, Carbonate of Potash 1 ounce, Washing Soda $1\frac{1}{2}$ ounces—dissolve in 20 ounces of hot distilled water, and make up to 30 ounces.

If the enlargements are from dense negatives, this developer should be used without dilution; but if weak negatives are used, dilute with equal quantity of water. Should the picture be over-exposed, and come up too quickly, pour off developer, and at once plunge into a dish of water, and continue and complete development by adding developer in small quantities.

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Metol is highly recommended for Bromide enlargements, as it is easily worked and is free from stains and irregularities; the makers' formula is as under—

In 40 ounces of Distilled Water dissolve first $\frac{3}{4}$ ounce of Metol, and then successively 7 ounces of Sulphite Soda, $3\frac{1}{2}$ ounces of Carbonate of Potash, and $\frac{1}{10}$ ounce of Bromide of Potassium.

To develope Bromide papers and enlargements, take of the above one part and dilute with 15 to 20 parts of water distilled.

Developer of Hydroquinone and Eikonogen combined—

Solution 1.—Mix Hydroquinone 80 grains, Eikonogen 120 grains, Bromide of Potassium 30 grains, Sodium Sulphite 2 ounces, Distilled Water up to 20 ounces.

Solution 2.—Sodium Hydrate 100 grains, Distilled Water 20 ounces.

For use take equal parts of Solution 1, Solution 2 and distilled water. When using this developer, no clearing bath must be used.

I have not given any of the old well known developers. Every amateur knows them, and almost every Annual as well as makers of papers give them, and the amateur who is not satisfied with those already mentioned, can easily try the others. Should the Acid Fixing Bath not be used, the usual one of 4 ounces of Hypo. to 20 ounces of water can be used. Whichever is used, the fixing should be continued for 15 or 20 minutes, and the washing between each operation must be very thorough.

TABLE FOR ENLARGEMENT.

Equivalent Focus of the Lens.	All measurements in inches.	Times of Enlargement.							
		1	2	3	4	5	6	7	8
		in.	in.	in.	in.	in.	in.	in.	in.
4	From Lens to Negative ...	8	6	$5\frac{1}{3}$	5	$4\frac{4}{5}$	$4\frac{2}{3}$	$4\frac{4}{7}$	$4\frac{1}{2}$
	From Lens to Enlargement ...	8	12	16	20	24	28	32	36
5	From Lens to Negative ...	10	$7\frac{1}{2}$	$6\frac{2}{3}$	$6\frac{1}{4}$	6	$5\frac{5}{6}$	$5\frac{5}{7}$	$5\frac{5}{8}$
	From Lens to Enlargement ...	10	15	20	25	30	35	40	45
6	From Lens to Negative ...	12	9	8	$7\frac{1}{2}$	$7\frac{1}{5}$	7	$6\frac{6}{7}$	$6\frac{3}{4}$
	From Lens to Enlargement ...	12	18	24	30	36	42	48	54
7	From Lens to Negative ...	14	$10\frac{1}{2}$	$9\frac{1}{3}$	$8\frac{3}{4}$	$8\frac{2}{5}$	$8\frac{1}{6}$	8	$7\frac{7}{8}$
	From Lens to Enlargement ...	14	21	28	35	42	49	56	63
8	From Lens to Negative ...	16	12	$10\frac{2}{3}$	10	$9\frac{3}{5}$	$9\frac{1}{3}$	$9\frac{1}{7}$	9
	From Lens to Enlargement ...	16	24	32	40	48	56	64	72
9	From Lens to Negative ...	18	$13\frac{1}{2}$	12	$11\frac{1}{4}$	$10\frac{4}{5}$	$10\frac{1}{2}$	$10\frac{2}{7}$	$10\frac{1}{8}$
	From Lens to Enlargement ...	18	27	36	45	54	63	72	81
10	From Lens to Negative ...	20	15	$13\frac{1}{3}$	$12\frac{1}{2}$	12	$11\frac{2}{3}$	$11\frac{3}{7}$	$11\frac{1}{4}$
	From Lens to Enlargement ...	20	30	40	50	60	70	80	90
11	From Lens to Negative ..	22	$16\frac{1}{2}$	$14\frac{2}{3}$	$13\frac{3}{4}$	$13\frac{1}{5}$	$12\frac{5}{6}$	$12\frac{4}{7}$	$12\frac{3}{8}$
	From Lens to Enlargement ...	22	33	44	55	66	77	88	99
12	From Lens to Negative ...	24	18	16	15	$14\frac{2}{5}$	14	$13\frac{5}{7}$	$13\frac{1}{2}$
	From Lens to Enlargement ...	24	36	48	60	72	84	96	108
13	From Lens to Negative ...	26	$19\frac{1}{2}$	$17\frac{1}{3}$	$16\frac{1}{4}$	$15\frac{3}{5}$	$15\frac{1}{6}$	$14\frac{6}{7}$	$14\frac{5}{8}$
	From Lens to Enlargement ...	26	39	52	65	78	91	104	117
14	From Lens to Negative ...	28	21	$18\frac{2}{3}$	$17\frac{1}{2}$	$16\frac{4}{5}$	$16\frac{1}{3}$	16	$15\frac{3}{4}$
	From Lens to Enlargement ...	28	42	56	70	84	98	112	126
15	From Lens to Negative ...	30	$22\frac{1}{2}$	20	$18\frac{3}{4}$	18	$17\frac{1}{2}$	$17\frac{1}{7}$	$16\frac{7}{8}$
	From Lens to Enlargement ...	30	45	60	75	90	105	120	135

Rule to indicate the relative positions of Negative, Lens, and Easel:—

Multiply focus of Lens by one more than the number of times of enlargement required, this will give the distance from Lens to Enlargement; then divide the product by the number of times the negative is to be enlarged, this will give the distance from Lens to Negative.

Example.—If you are working with a Lens of 8 inches Focus and wish to enlarge your Negative 4 times, look in the table under column 4 of "Times of Enlargement" and opposite to 8 under "Equivalent Focus of Lens" and you will find $\frac{10}{40}$ inches which means the Lens is to be 10 inches from the Negative and 40 inches from the Enlargement.

OUR HOME LETTER.

The great cycle boom has prevented the accession of the usual number of recruits to the ranks of *dilettante* photographers this year; for the upper ten, the nobility and gentry, have decided that it is fashionable to ride a bicycle, especially for the fair sex, therefore the dealer in cycles is pocketing the cheques instead of the dealer in photographic apparatus. Next year let us hope that photography will be taken up in high-life, and that all the world and his wife will follow suit. Of course this specialization in hobbies only affects those on the fringe, those who never get deep down into anything, who are content bee-like to sip from every flower without drinking deeply of the Perian spring.

Within the circle things are going on very much as usual, except perhaps that there is at present a strong leaning towards those higher fields of art to which photography holds a key. The movement is small yet, but it is growing. A few photographers have begun to see that it is waste of time to be for ever pottering with this and that process, to be eternally discussing different forms of apparatus, that after all these things are merely means to an end, and that end is the production of pictures, of works which shall appeal to the heart and mind. Just as the poet produces his verses, and the painter puts his ideal on to canvas, so the photographer is beginning to send out the latent poetry of his soul into his photographs.

What we really need here is a school or schools of pictorial photographic art. We have technical colleges and classes in abundance where the rudiments of manipulation are taught, but no one at present is offering instruction in the higher fields.

The principal event of the present month has been the Photographic Convention of the United Kingdom held at Leeds under the presidency of the well known photographer and author Mr. H. P. Robinson. The success of the Leeds meeting was in no small degree due to his energy. Although nearing the ripe age of 70, his mind seems as active as ever. His principal work at Leeds was the collecting of about a hundred pictures, the best which photographic art has produced. Such a collection proved of infinite value and interest to the many photographers gathered together, and with the outside public who visited the show created for the most part considerable astonishment. The majority had never seen photographs like them before. Their wonder is not surprising when it is remembered that most people's ideas of a photograph are summed up in the highly glazed, black and white, hard print of a person in a wholly artificial position and amid entirely artificial surroundings, with every detail of dress almost microscopically revealed, the whole being as destitute of art and beauty as a Hottentot.

In connection with the Convention there were a number of interesting excursions during the day, while reading of papers and displays of lantern slides took place each evening. Next year the Convention will hold its meeting at Gt. Yarmouth, conveniently situated for access to the Norfolk Coast and to the characteristic scenery of the Norfolk Broads.

Some time ago I referred in this letter to "The Recollections of Vernon Heath." I should like to give another anecdote from the book, with which my letter must conclude. In 1867 a review of the English fleet took place at Spithead, and Mr. Heath had received a commission from the Admiralty to take photographs of the ceremony. A gunboat under the management of Captain—afterwards Admiral—Tryon, who perished ultimately on the Victoria, was provided for the photographer. The weather was wretched, a gale was blowing, accompanied by heavy rain and hail. Mr. Heath's assistant was overcome with sea-sickness, and could not render any help, so the photographer himself prepared a plate and exposed it as the yacht with the Sultan of Turkey on board passed by, only to find the result the worst of failures. "I communicated this to Captain Tryon," he continues, "and told him that, so far as my work was concerned, failure for the rest of the day was inevitable."

In a short time the Victoria and Albert left her moorings with the Queen and Sultan on board, and steamed towards the fleet; and, in accordance with our orders, we followed in her wake. In spite of most unfavourable weather it was a grand and imposing sight. The fleet was moored in two lines, between which the Victoria and Albert passed, our gunboat following. It was, though, more than ever convincing that there was no work my camera could do, so I gave myself up to the enjoyment of a pageant such as I had never previously seen.

We had reached the extremity of the lines, where the Queen's yacht stopped for the performance of some ceremony which was to take place on board, on conclusion of which she turned and again steamed down between the ships. Following the yacht as before, Captain Tryon said to me: "Vernon Heath, you are not the man to go away to-day without taking a negative." "Well," I answered, 'as you know, I would do anything to get one, but it is not possible." "Well, we will just see," he replied. "It may fail, but, nevertheless, I have thought of a scheme." That scheme was as follows: I was directed to place my camera, without its stand, on the top of one of the paddle boxes; two of the crew were told off to lie by its side, and hold on the cloth which covered it, and then, when the intended view was focussed and the plate was in position, I was to give a signal which Captain Tryon arranged for me. All this was accurately and exactly carried out, and to my surprise, the ship, which throughout the day had been rolling considerably, suddenly steadied, and I exposed my plate. Seamen and yachtsmen will know what it was that, under Captain Tryon's orders, had been done. As we were steaming in our course, the rudder, in a moment, had been put right about, and thus, for the time that was necessary for my purpose, the vessel was steady. To Captain Tryon—and to him alone—I was indebted for a good negative and most interesting record of

a grand ceremony, obtained, too, under conditions such as I should have deemed hopeless."

Our two greatest exhibitions, the Salon and that of the Royal Photographic Society, will both open their doors early in October. I wonder if we shall see any pictures from India at either of them.

MATTHEW SURFACE.

PROCEEDINGS OF THE SOCIETY.

Monthly Meeting, held at the Masonic Hall, Mount Road.

Friday, August 7th, 1896.

Surgeon-Major J. L. VanGeyzel, Vice-President, *in the chair.*

The minutes of the previous meeting having been circulated to members, in the last issue of the journal, were taken as read and were confirmed.

The Honorary Secretary read letter from the President excusing his absence from the meeting, as he was away from Madras. He also read several letters from members making certain suggestions. These letters were placed at the disposal of the Editor of the Journal and they will be found in the correspondence column.

PROPOSAL OF NEW MEMBER.

Capt. Thomas proposed and Mr. J. L. Walker seconded—

Surgeon-Major E. P. Youngerman,

and he was duly elected a member of the Society.

THE QUESTION BOX.

(1) I find when washing my prints (first washing) that no "salts" seem to come from the paper, the different changes of water remain quite clear with none of the "milkiness" that always came in the first two changes. I have only experienced this the last two or three weeks, and I am using rain water just as I did last monsoon. I should like to know why this is, and if it effects the permanency of the prints?

The "milkiness" in the first washings is caused by the chlorides which are always present in ordinary water acting upon the silver salt which is on the paper and forming silver chloride. As this latter compound is insoluble in water, it turns the water milky. Rain water does not contain chlorides and hence the absence of the "milkiness." The object of these washings being to remove the unchanged silver salt, the absence of milkiness need not affect the permanency of the prints, though it is sometimes recommended that a little common salt (which is a chloride) should be added to the washing water.

(2) Some of my last year's prints are fading. I have followed all the instructions (to the best of my knowledge) given in the printed instructions. Are there any other causes for this besides "insufficient washing and fixing?"

Insufficient toning and imperfect fixing are the two most frequent causes of fading of prints. As for washing, there can be too much of it, for Messrs. Haddon and Grundy's experiments have shown that prolonged washing adds sulphur to the paper, and fading of prints has been attributed to the presence of sulphur compounds in the paper. It is of course possible to carry out the "printed instructions" and yet to insufficiently tone and fix prints, *e.g.*, prints which after toning in gold fix out with a reddish tint, or have a reddish tint in the deepest shadows are imperfectly toned.

(3) I shall be much obliged if any one can tell me how I can have a division for stereoscopic photography put in my half-plate camera. It ought to be a removeable division and should not injure the camera for half-plate work.

A bellows partition is mounted on two strips of wood which are fitted into slots in the centre of the front and back frames of the camera body. These strips should lie flush, when *in situ*, so that they do not obstruct the movements of the dark slide or of the rising front on which the lenses are screwed. Two narrow elastic bands are fixed from one strip of wood to the other, and when the partition is stretched by racking out the camera, the strips of wood are held firmly in their places. When the camera bellows are racked in, and the elastic ribbons relaxed, the partition can be removed, and the camera used again as usual. In the Journal for November 1895, there is a paper by Mr. Dunsterville on Stereoscopic Photography, in which you will find much useful information, and there is in the Library a book on the subject reviewed in this issue, which you can get from the Honorary Secretary.

PICTURES FOR THE DAY.

H.H. The Elayah Rajah of Travancore sent three excellent "Copies" of pictures, printed on P.O.P., and members were anxious to know whether orthochromatic plates had been used. Mr. J. L. Walker showed a copy of an oil painting and Surgeon-Major VanGeyzel showed a copy of an oil painting of the Abbé Dubois (hung in the Literary Society's Library) which had been copied with good rendering of color values on a Wratten's "Instantaneous" plate.

THE PICTURE SUBJECT

for next meeting will be "A Group," and for the meeting after the next "A Building."

MISCELLANEOUS EXHIBITS.

Mr. Dunsterville brought to notice a new mounting medium, viz., *"Higgins' Photo Mounter"* which is always ready for use, keeps well for months, and is in every way a most satisfactory mountant.

Surgeon-Major VanGeyzel showed the following:—

A *"Niagara-plate Washer,"* by which a small flow of water over the face of the plates removes hypo in less than half an hour.

"A Sea Rack" of the pattern supplied to the English Government Survey Service, for washing plates on boardship. The plates are firmly clamped in the rack, a lanyard is passed through the sockets and the whole is thrown over board. A slight rinsing subsequently in fresh water is all that is required.

A bottle of *"Formalin"* for hardening gelatine films, and a bottle of *"Kristaline Varnish."* This varnish is used cold for plates, or lantern slides, is very clear, and leaves a coating which stands a good deal of rough handling. A lantern slide varnished with it was passed round for members to handle and it was freely thumbed and wiped without showing scratches or marks.

Two *"light tight plate boxes"* of improved pattern, less liable to leak than the older patterns. It was suggested that these when used with a rubber band over the join (like a calcium tube) would effectually prevent damp getting in.

"Corney's A. B. C. Meter," the manner of using which was explained.

"A Baernaert's Print Out Lantern Slide," for contact printing. These plates are very slow, the specimen shown having taken one hour to print in daylight. They print a deep red, and can at once be mounted for the lantern, without toning or fixing. The advantage of these plates is that a number of slides can be made and shown through the lantern, several times if required, and they can then be toned and fixed if desired subsequently at leisure.

TECHNICAL WORK.

Surgeon-Major VanGeyzel then gave a demonstration of the method of working the *"Cold Bath Platinotype Paper."* He briefly explained the process, and referred members, wishing for fuller details, to his pamphlet on the subject which was published by the Society some years ago.

The platinotype paper is sent out in hermetically sealed tins and keeps well in those tins for six months and more. On opening a tin, the whole of the paper should be transferred to a calcium tin from which it is used as required. This precaution is necessary, since it is desirable to keep the paper as dry as possible, damp paper being liable to produce muddy prints. The cold bath paper however needs less rigid care in this respect than the hot bath paper, and the new "C. C. cold bath paper" (thick quality) is under certain circumstances even the better for being slightly affected by damp. The degree of dampness is not appreciable to the touch, though paper which is as dry as it should be is quite crisp and warm when first taken out of the sealed tin. Paper which is limp would be far too damp for ordinary methods of working. For the beginner at any rate, it is advisable that every precaution should be taken to ensure that the paper is quite dry, and the calcium tube is a necessity in any case He has heard members sometimes speak of the use of a calcium tube as something far too troublesome. On the other hand, its use is far less troublesome than getting out a sheet of bromide paper from the innermost of three covers, and carefully replacing the rest. When the calcium chloride in the tube gets moist, it can be baked in a chatty over a charcoal fire and made serviceable again. To obtain the best results in the ordinary way of working the paper, it should be kept dry while in the printing frame too, indeed up to the moment of developing. To ensure this, the paper, after it is placed against the negative, should have a piece of waterproof material (a rubber sheet) placed between it and the usual pads of the printing frame. The calcium tube and these rubber pads are always procurable at small initial cost from dealers who stock platinotype paper. The frame is put out in daylight and the printing watched, in a shady verandah, by turning back the pads and observing the changes, which take place on the surface of the paper. The sensitive surface is lemon yellow, and as printing proceeds, the parts on which light acts change to an ash colour, which deepens in tint to a bluish shade and, if printing is carried much further, to an orange and brown shade. It is not necessary usually to print beyond the bluish ashy shade, at any rate the printing should not be carried so far as to sensibly alter the lemon yellow colour of the paper under the densest portions of the negative. The print is now removed from the frame and developed at once, or it is stored in the calcium tube until a batch of prints is ready for development. It is best at first to rigidly follow the instructions sent out by the makers of the paper, and development should be performed with the strength of solutions recommended by them.

Neutral Pot. Oxalate ...	1-lb.	Stock developer.
Water	54 ozs.	

Take one part of this and dilute with an equal part of water. Have enough of it in a dish to the depth of say half an inch, take the print up in the hand, holding it by one edge, rest the opposite edge on the surface of the solution and evenly lower the print so that its surface just sweeps the surface of the solution. Pick up the print, and if any air bubbles are on the surface, dab the surface of the print quickly into the solution and again pick it up. Development can be watched, but as a rule it is very quick, and when it is completed, drop the print face downwards into the clearing bath. This consists of Hydrochloric acid diluted to the strength of 1 part of acid to 60 parts of water. For small prints a simpler method of development is to brush the developer over the paper, and for this purpose, it is recommended that the above stock developer should be diluted with an equal part of glycerine instead of water. A little of this mixture is poured into a cup, a broad camel's hair brush is wetted with it and the solution is brushed across the face of the print, each stroke slightly overlapping its predecessor. The use of glycerine restrains the action of the developer, and development is somewhat slower and controllable. After five minutes' immersion in the first acid bath the prints are transferred to a second similar bath, in which they should remain for ten minutes and be then transferred to a third acid bath for fifteen minutes. The last bath should be quite colorless,

otherwise a fourth bath should be employed. As a rule three baths are ample. When the first acid bath becomes quite yellow it is thrown away, and the second is made the first bath and the third the second, while a clean third bath is substituted. After clearing in acid, the prints are washed in three changes of water for half an hour, blotted, dried, trimmed, and mounted. The whole operation from start to finish takes less than one-third of the time that any other printing process takes, and the results are not to be mentioned in the same breath with other printing out papers. Only the ordinary method of working this paper was shown, but the demonstrator remarked that it was possible to obtain varieties of tone from black and white to reddish and sepia tones by introducing variations in the method of working; *e. g.*, by using the normal developer at ordinary cold weather temperatures, or even a colder solution, bluey grey and velvety black tones can be obtained, and by warming the bath to 120° Fahr. and even 140° Fahr., much warmer tones are obtained. The demonstrator showed a series of five prints varying in tone from black and white to a warm rosy tint, all obtained on the cold bath paper. He then stated that it was quite possible to obtain satisfactory prints even on stale platinotype paper by printing deeply and developing with a very dilute developer (1 part stock developer and 50 or 60 parts water), as demonstrated recently by Mr. Dunsterville. He then proceeded to demonstrate that stale paper can be utilised satisfactorily by printing the picture almost right out and developing it by simply immersing the print in *plain water, without any oxalate in it at all.* A print developed in this way by Mr. Walker at the suggestion of the demonstrator was awarded a bronze medal at our last half-yearly competition; and members who have seen the print will probably wonder at such an effective result being obtained by so simple a method of development. The printing can hardly be carried too far for this treatment, but it is however a method which the demonstrator would not recommend except when the paper is so stale as not to yield good prints by the usual method of development.

CORRESPONDENCE.

Washing Silver Prints.

To The Editor.

Sirs,

The Editors, on page 86 of the *Journal* for July 1896, referred to the investigations, made at home by Messrs. Haddon and Grundy, as to the number of changes and the quantity of water required to clear albumenized prints from all hypo and other soluble compounds.

The Editors gave full details of the method adopted by the above gentlemen, so that all photographers could take the necessary precautions to ensure the removal of hypo, &c., from their prints. It occurred to me that it might possibly be useful to our members if the instructions were given in a somewhat more practical manner, and this I have ventured to undertake in the following notes.

Firstly, I would lay the greatest stress upon the absolute necessity for the most perfect fixation. For one packet of ordinary P. O. Paper use 2 ounces of fresh hypo dissolved in 14 ounces of clean water, leave the prints in the fixing bath for at least 20 minutes, turning them over and over and separating them so that they do not stick together. The permanency of silver prints depends as much *(or more)* upon their complete fixation as upon the removal of the soluble compounds.

After fixation is complete, I recommend that as much of the adhering hypo as possible should be removed by rinsing in a large volume of water (say a wash-hand basin full) and then the process of removal of the hypo from the substance of the paper can be proceeded with.

I prefer to use at least five separate changes of water, draining the prints carefully between each change, the quantity of water being proportioned to the number and size of the prints under treatment as in Messrs. Haddon and Grundy's experiments.

A shilling packet of gelatino-chloride paper, as issued by nearly all manufacturers, contains about 500 square inches of surface, and the quantity of water required for *each* of the five changes should be therefore 500 cubic inches, or, say, 290 ounces, equal to about twelve ordinary quart bottles, or two gallons.

The following table shows the quantity of water required for *each* of the five changes necessary for the washing of one piece of silver paper of each of the usual photographic sizes:—

Size of Print.	Quantity of water required for each change.		
$4\frac{1}{4}$ x $3\frac{1}{4}$ inches.	8 ounces, say half a soda-water tumbler full.		
5 x 4 „	11 ounces, say two-thirds	do.	do.
$6\frac{1}{2}$ x $4\frac{3}{4}$ „	17 ounces, say one soda-water tumbler full.		
$8\frac{1}{2}$ x $6\frac{1}{2}$ „	32 ounces, say 2	do.	do.
10 x 8 „	44 ounces, say $2\frac{1}{2}$	do.	do.
12 x 10 „	66 ounces, say 4	do.	do.
15 x 12 „	99 ounces, say 6	do.	do.

Multiply the above quantity by the number of prints you propose to wash. I have put it in soda-water tumblers as they are to be found in every house in India.

The prints should be kept for five minutes at least in each change of water and be moved continuously all the time.

July 23rd, 1896. F. D.

The Society's Influence.

To The Editor.

Sir,

The other day I found my dressing-boy looking at a photograph of our late President's butler. I asked him who took it and elicited the following details:—

"Mr. L.....'s boy took it with master's camera, "master's plate, master's developer, and printing too!" Who will say after this that the Photographic Society of Madras does not exercise a far reaching influence?

Yours truly,

Ooty, 1st July 1896. L. J.

The Monthly Pictures.

DEAR SIR,—I should like to say that I, for one, miss the criticisms that were printed in the journal, for three or four months, on the monthly pictures. They served to indicate the faults in the pictures. Cannot the Editors see their way to re-introduce this practice?

Yours faithfully,
D. S.

HUNSUR,
4th August 1896.

[Please see Editorial Note on the subject.—*Eds.*]

DEAR SIR,—Might I suggest that the notice of the subject for the monthly competition be sent to up-country members sometime during the middle of the month, instead of about a week before the monthly meeting. Speaking for myself, I may say that I would have competed several times, but the notice was too short for the time at my disposal.

Trusting that some such thing, if possible, can be arranged

I am,
Yours very truly,
H. M. L.

OORGAUM,
18th July 1896.

[The post-card sent a week before the meeting is only a reminder, the picture subject being announced in the middle of the month in the journal, under Proceedings of the Society. In future, the subjects for two months will be announced in the journal. Kindly see Editorial Note on Monthly Picture subject.—*Eds.*]

A Combined Toning and Fixing Bath.

DEAR SIR,—I have tried, with great success, the following combined toning and fixing bath, recommended by Mr. W. L. Edge in the *Journal of the Photo Society of India*, viz.:—

Hyposulphite of soda	...	4 ounces.
Water	...	20 ,,
Ammonium sulphocyanide	...	$2\frac{1}{2}$ drachms.
Gold chloride ...	...	6 grains.

The prints are immersed in the above without any previous washing, and they very soon become red. They acquire the proper color in about fifteen minutes. I send three sample prints and shall be glad to know what you think of them.

Yours faithfully,
R. V.

TRIVANDRUM,
25th July 1896.

[All of excellent tone, but the manufacturers of P. O. P. have addressed a letter to that Journal strongly deprecating the use of the above combined bath. They say: "It has all the dangers that other combined baths possess* * We fully recognise their slight advantage in saving of time and labour, and we should not be so short-sighted as to adopt our well-known attitude of disapproval of the combined bath* * The reputation of our paper, and good and lasting results to our customers are the most important points for our consideration."—*Eds.*]

EXTRACTS.

Lantern-Slide Making as an Art.

BY JOHN A. HODGES.

The qualities to be looked for in lantern-slide making processes are: fineness of deposit, freedom from granularity, absence of any tendency to fog, transparency, and good colour. Both the albumen and the collodio-bromide processes possess all these attributes in a high degree. The former process, notwithstanding the beauty of the slides produced by it, is by no means an easy one to master; moreover, its slowness precludes the possibility of making the slides by reduction, and restricts the user to contact printing. Collodio-bromide in capable hands produces results which, if not superior, are certainly equal to those produced by any rival method, but the preparation of the emulsion is an art which comparatively few have fully mastered, and those who have done so deserve high praise for their skill.

Wet collodion, though capable of producing fine results, requires skillful handling, for probably no process so readily lends itself to the production of bad slides. That it is almost exclusively employed by commercial slide-makers must be attributed to the fact that it is cheaper, more expeditious, and possibly also more certain than other methods, rather than to the superiority of the results produced by it.

The carbon process is simple, yields beautiful slides, and gives the slide-maker, with an eye to artistic effect, a fine command of colour; but, with most tissues, a stronger negative than is desirable for general purposes is necessary in order to obtain sufficient vigour in the slides; and this reason, coupled with the fact that the slides can only be produced by contact, probably accounts for the process not being more frequently employed.

In discussing the relative merits of processes applicable to lantern-slide making, the question of contact printing *versus* reduction is naturally involved. It is still, I believe, the popular opinion that slides made by contact are inferior to those produced by reduction. I at one time held the same view, and formerly made all my slides in the camera irrespective of the size of the negatives; but, after some carefully conducted experiments in which slides were produced by each method from the same negative and compared, I have come to the conclusion, that so far as technique is concerned, one method presents no advantage over the other. The two slides I now show you were produced, the one by contact the other by reduction, from a $3\frac{1}{4}$ x $3\frac{1}{4}$ negative, and, in regard to quality, it would be difficult to detect any difference between them. Pictorially considered, very different consideration, however, arise, and printing by contact from even a quarter-plate negative may, by altering the original composition, entirely destroy the artistic qualities which the slide would, if made by reduction, have possessed. The converse, however, in some cases, also holds good, and a negative originally defective in composition may be considerably improved by utilising a portion only for the slide. The following slides will perhaps illustrate my meaning. This slide, which was reduced from a quarter-plate negative, I venture to think, is of fair artistic merit, and does not sin in any very marked degree against the ordinary canons of pictorial art. The same, however, can scarcely be said of the next slide, which was made by contact from the same negative. These two slides are a practical illustration of the loss of quality which may ensue when contact printing from negatives larger than the slides is resorted to. The next slides, however, prove that this is not an invariable rule, and demonstrate that, in some cases, where the original composition is defective, a positive gain may result from the exclusion of unnecessary subject matter. It will be seen, therefore, that, from an artistic point of view, the question is one upon which no arbitrary opinion can be given. Neither method can be said to possess superiority. In some cases the slide-making process chosen will decide the matter for us, but, where the process permits of either method being adopted, good taste will alone enable us to decide which will enable us to obtain the best result from a given negative.

It is not possible, in the time at my disposal, to give more than a cursory glance at the various processes employed in slide-making; but I cannot conclude even this brief reference without a word or two upon the gelatino-bromide process, which, amongst amateurs at any rate, is now the most popular of all. This process, with which even the youngest worker is familiar, will yield under suitable

treatment slides which, from a technical point of view, will be, if not superior, at least equal, to any produced by the older and more highly extolled methods. This opinion, not hastily arrived at, nor based solely upon my own work, but formed after a critical examination and comparison of the best representative work of others, will not, I am aware, be shared by you all; it is probably one of those points upon which no amount of argument will carry conviction. Some photographers, in a good old conservative spirit very refreshing in these regenerate and radical days, still refuse to believe that perfection in a lantern slide is possible of attainment, unless its production be associated with either the albumen or the dry-collodion process; but, as I have already said elsewhere, they belong to a class which still affects to regard the gelatine process as a retrogression rather than an advance. Gelatine, I must admit, is probably responsible for more bad slide than any other process. Those of you who are in the habit of attending Society Lantern Evenings are, doubtless, only too well acquainted with the frightful examples of "how not to do it" which are always to be met with upon such occasions. Such undesirable results are, however, in no way attributable to, or inherent in, the process, but are solely due to lack of skill upon the part of those who work it. One great advantage of the gelatine process is its rapidity, combined with the enormons range of colour obtainable, ranging from black to yellow—a very important point, as I have already said, to the artistically minded slide-maker.

Commercial lantern plates vary greatly in quality, some being very much better adapted to their purpose than others. I cannot here, of course, make specific reference to particular brands, but the observant worker should have but little difficulty in making a wise selection. Freedom from granularity is one of the most important attributes of a lantern-slide emulsion, and, given a suitable exposure and system of development (upon which, of course, to a large extent, the physical condition of the image will depend), the plate showing least granularity will make the best slide. Great rapidity is inimical to the obtainment of these conditions; therefore, as a rule, rapid lantern plates should be avoided, though it is only fair to add that there are some such plates in the market capable of giving fine results. For reducing, a plate containing bromide of silver is almost a necessity; but, for contact work, a plain chloride plate may be used with advantage. The latter plates—for some reason not easy of solution—have never met with the popularity they deserve. Possibly their indifferent keeping quality may have had something to do with this want of popularity; at any rate, when freshly prepared and skilfully developed, slides may be produced upon them possessing all the fine qualities usually associated with the albumen process.

Given a good plate, the excellence, or otherwise, of the result obtainable upon it depends to a very considerable extent upon the mode in which it is developed. In this respect commercial lantern plates vary very much, and treatment that would produce a successful result with one brand might, from a critical point of view, altogether fail with another. I do not advise adhering too rigidly to makers' formulæ; and in very many instances solutions far too strong are recommended, and better results will often be obtained by diluting the developer. The attributes which constitute perfection in a lantern slide may be summed up as follows:—Its colour, whether warm or cold, must be pure, and not dirty or degraded; the range of gradation must be as perfect as possible from high light to deep shadow, but the latter must always be luminous, never opaque, and free from granularity; nor must there be the slightest degradation or veiling of the high lights. In this latter respect, collodion, both wet and dry, has a marked advantage over gelatine, for, dry as one may, it is impossible to stain a collodion film, whilst a gelatine one is very prone to this defect unless steps are taken to avoid it. Almost any developer employed for negative work may be used for the development of gelatine lantern plates, though some are more suitable for the purpose than others. It is impossible to weigh the *pros* and *cons* of the legion of developers that now exist. For warm tones I am of opinion that pyro, if it be properly used, is still unrivalled. Many published formulæ give too large a proportion of pyro, and do not contain sufficient sulphite to prevent a slight staining of the film, when, as is often the case, development is protracted. With the following modified pyro developer, and giving what, with a more normal strength of solution, would be a very full exposure, I find it possible to obtain a rich, warm, brown-coloured slide, possessing in a high degree those technical qualities to which I have adverted:—

Sulphite of soda	240 grains.
Distilled water	35 ounces.
Citric acid	30 grains.
Pyro	40 „

To use, take two ounces of above, adding from 30 to 40 mlnims of ten per cent. soluble bromide of potash, 40 to 60 minims of ten per cent. ammonia, and, for very warm tones, 20 to 30 minims of ten per cent. carbonate of ammonia.

The colour of a lantern slide is very much a matter of taste. I confess myself to a preference for a warm colour whenever the nature of the subject permits. Good taste here is the only reliable guide. A warm brown will suit most subjects—landscapes, interiors, or figures; but a winter scene, particularly if snow or frost is depicted, would obviously demand a cool grey or black. One does, however, even now occasionally meet with such an anachronism as an ice-bound river portrayed in ruddy brown, as, for example, in the slide now upon the screen; when the same view is presented to you in cool grey, I think I shall have sufficiently emphasised my point. Let us take another illustration. Although black is a safe colour in which to render almost any subject, and there may be nothing objectionable in so portraying such a subject as the north door of Calder Abbey, yet those who have visited that beautiful ruin know that its principal charm lies in the rich warm red sandstone of which it is built, and will consequently prefer the subject treated in the way I now show you, though, technically, and apart from colour, the slides are, I think, of equal merit. From a purely technical point of view, there is much to be said in favour of warm-coloured slides, for we know that the conditions which are essential to their attainment—*i.e.*, full exposure and a restrained development, with a weak developer—tend to the production of a fine deposit and freedom from granularity, the ultimate result being a finer and more delicate slide.

Hydroquinone is perhaps the most popular of all developers for lantern transparency work, probably chiefly on account of its non-staining properties. But a cleanly developer, which does not stain the hands, is not the only desideratum for which to look, and in unskilfnl hands hydroquinone is apt to give results which are very bad indeed. It is true that a wide range of colours can be obtained with it, but its use should be restricted to the production of warm colours, for with many commercial plates, if blacks or greys are aimed at, far better results, both in purity and tonality, will be obtained with ferrous oxalate. Although one of the caustic alkalies is generally recommended as the accelerator in formulæ for transparency work, I much prefer carbonate of soda, which seems to work more evenly, and possesses several advantages. With hydroquinone there is, at any rate in my hands, a decidedly greater tendency to block or clog in the shadows than is the case with pyro, a difficulty which it is not always possible to successfully overcome by dilution of the developer. These I consider to be the chief failing of hydroquinone as a developer for lantern slides. These are examples of slides developed with hydroquinone.

Eikonogen, either alone or in conjunction with hydroquinone, produces good results on some plates; and, in parenthesis I would say, a plate should not be condemned because with a particular method of development it does not give just the result desired, for a different treatment may result in the production of the finest possible slides. The next two slides were developed with eikonogen.

Metol and amidol have found favour with some workers for lantern slide work. I have had but limited experience with the former; the latter, amidol, produces blacks of very great purity, and has little tendency to block or clog the shadows, but with most plates it is necessary to push development rather far in order to get sufficient density. It is an excellent developer for this reason when slides have to be produced from very dense negatives.

I am reminded by this allusion to negatives that I have not yet referred to this very important branch of the subject. The excellence of the slide will, of course, depend primarily upon the quality pictorially and technically of the negative from which it is made. Although much may be done in the way of improvement by skilful manipulation, I need hardly say that, although it may not be impossible to get good slides from bad negatives, it is certainly a difficult matter, and it is equally certain that the best slides will only be producible from perfect negatives. There is at the present time a tendency to prodnce thin, soft, weak negatives, probably brought about by the general adoption of gelatino-chloride paper, a degenerate tendency which, if carried to extremes, is not likely to improve the status of photography from any point of view. Such a type of negative is unsuitable for the best transparency work. A good plucky negative, with a full range of gradation, not so dense that the high light will not show printable detail, nor so clear that the shadows are devoid of detail, will be found to give the best results. In both taking and making the negative, we cannot be too careful, for, from both a pictorial and technical point of view,

defects that would perchance pass unnoticed in a paper print, will become glaringly obtrusive when magnified many diameters and projected upon the screen.

Whilst dealing with this part of the subject, I should like to say a few words upon proportion, because it has a most important bearing upon it from a pictorial point of view. In showing views of different kinds of subjects, more attention should be given to their relative sizes, and care should be taken to avoid as far as possible exaggerating the natural relative proportions of the various objects depicted. For example, it seems almost absurd to show some flowers from a bush of syringa magnified to the dimensions of prize cabbages, whereas we know that each blossom is little more than an inch in diameter, and where possible the very next slide may be a figure study in which the figure is represented as being very much less than life size, which in its turn may be followed by a child of Brobdignagian proportions.

One word upon a matter which seriously affects lantern-slide makers. I refer to the judging of slides at open competitions. Medals are usually offered for pictures and for lantern slides, but there is no doubt that in selecting Judges regard is almost always had to the pictures and not to the slides, the result being that gentlemen are frequently appointed who, though eminently qualified to judge of the merits or demerits of the former, take but little interest in the latter, the result sometimes being that at the last moment the slides are judged hurriedly, and in an almost perfunctory manner. I would suggest, for the consideration of the promoters of Exhibitions, whether it would not be to their own interest, as well as in the interests of lantern-slide making as an art, that some one recognised as an expert in this branch of photography should be entrusted with a task which is certainly as difficult as that of judging of the merits of photographs on paper.

I have reserved the mounting of the slide for my concluding remarks, but it is by no means the least important aspect of the subject. Although a few clever amateur slide-makers fully recognize the importance of paying attention to this part of the preparation of the slide, it is astonishing how little regard is paid to it, not only by the general run of amateurs, but also, I regret to say, by the majority of professional lantern-slide makers. It must be apparent to the most superficial observer that the shape of the mask of a lantern picture will as much influence its effect upon the screen as would the mount or frame of a paper positive. Very conservative notions appear to prevail in commercial slide-making circles, and squares, circles, domes, and cushions are still the ruling shapes, the prevailing idea being, apparently, to include as much as possible of the subject upon the area at command. $3\frac{1}{4} \times 3\frac{1}{4}$ has now become the recognised standard size for lantern slides in this country, and it is, upon the whole, a most convenient size; but that we should be limited to ugly squares and circles in our commercial slides passes my comprehension. I think, if those who cater for our wants in this direction were to give their customers the option of oblong openings, a mutual gain would result. The picture now upon the screen is the production of a well-known firm of slide-makers; technically it is a good slide, but pictorially it is entirely spoilt by its inartistic mount. To emphasise my point, when I take the liberty of substituting an oblong mask for the unsightly square one, the improvement from a pictorial point of view will be manifest.

No rules can be laid down for the guidance of the slide-maker in the selection of suitable masks, the matter is essentially one for the individual exercise of good taste and judgment. Squares, circles, domes, and ovals will rarely be found suitable, though each may in exceptional circumstances produce the effect desired. Eccentricity of any kind should be avoided, oblong openings will be found to best suit the majority of subjects. The incongruity and bad taste of fancy shapes, such, for example, as that now upon the screen, will be obvious to you all, though the fact that such masks are commercially obtainable would appear to indicate that a demand (let us hope a small one) exists for them.

The shape which sins most against the artistic is the oval. It is, at any rate in a lantern slide, but rarely to be tolerated. It may be said that it serves a useful purpose in cutting off an uninteresting foreground, but where its employment for this reason would seem to be indicated a more pleasing effect will often be produced by vignetting. The practice of vignetting has been very strongly condemned, but in some cases a very pleasing and artistic effect, difficult to obtain in any other way, may be secured.

Mr. Tulloch, in the paper to which I have already referred, advocates printing lantern slides with a white margin, and his remarks upon the subject are so telling that I take the liberty of quoting them:—

"Everybody, I presume, understands the meaning of tone values. Briefly, it means the degree of black, say, which must be used to represent different colours in a composition. Say that a drawing has to be made in black chalk, or pencil, of such a subject as a plate of fruit, consisting perhaps of lemons, green grapes, and black or blue grapes. How dark must these various objects be to roughly represent the intensity of colour carried to the eye from the lemon and the two kinds of grapes. None of them will be white, of course, and, assuming that the lemon will be the lightest, it will yet be darker than pure white, the green grapes will be slightly darker than the lemon, and the black grapes darker still. These are the tone values, and this is what I am driving at. A white margin will show that the lemon was not white, but a pale tint less luminous than white; from the value of the lemon you can determine the value of the grapes Suppose, now, we remove the white margin. What happens? You have lost the key to the tone values. All must have noticed how very frequently sunshine effects are mistaken for snow scenes when shown upon the screen. Dust on the road looks like snow, sunlight on the leaves looks the same. Why is this? No doubt some of the pictures are bad, but not all such. The road is not absolutely white, neither the high lights upon the leaves; but, having no absolute white wherewith to judge, they *seem* to be white, and hence the snow effect."

With every word of Mr. Tulloch's in this connexion, I most cordially agree, and, although I cannot show you the actual slides to which his remarks refer, the next two slides, which I have somewhat hastily prepared, will, I think, demonstrate the truth of his remarks.

I need scarcely point out what an important influence upon the pictorial effect of a lantern slide the introduction of a suitable sky has in those cases where, in its absence, there would be an expanse, more or less large, of blank, white screen. Many photographers who would not dream of letting a paper print go forth without a sky never attempt to introduce one into a lantern slide. The difficulty, however, of double printing is really no greater, indeed, I think it is less, in the case of a slide than a print, and may be reduced to a minimum by printing sky and landscape on separate plates. When this last method is resorted to, care must be taken to secure a similar colour in both landscape and sky. A word of warning whilst upon the subject of skies. At the present time moonlight effects, so called, generally produced by and against the light exposure at or near sundown, are very popular with the public, and when exhibited generally elicit applause. Many, indeed the majority of, such effects are grossly untrue to nature, the tonality altogether false, the "catchy" effect being due to an excessive contrast of light and shadow, as offensive to a trained eye as it is false to nature. The high lights in such pictures are often far too brilliant and devoid of tone, and the dark clouds with which they are contrasted are far blacker and denser than any clouds ever are in nature. Let those who are fond of such effects (and, when rendered with some approximation to truth, more beautiful subjects for lantern slides could not be found) not forget that cloud forms, however heavy in themselves, are but vaporous masses, and in their most thunderous and forbidding aspects, always luminous. The caution being given, the evil may be easily avoided, both in the development of the negative and of the slide by following the golden rule, "Keep the shadows luminous and avoid undue opacity." I will now show you one or two examples of difference in rendering of the same subject, a practical illustration of my remarks.

I have now completed, though, I fear, in a very inadequate manner, the task which has been allotted to me. I cannot say that I regret that the opportunity has been afforded me of putting my views upon the subject in a concrete form before you, though, doubtless, abler hands than mine might have been intrusted with the task, for the subject is one in which I take the keenest possible interest. Slide-making and the use of the optical lantern have always been a pet hobby of mine, and I am glad of the opportunity of endeavouring, however feeble may be the attempt, to raise the status of a branch of photography than which I believe none other has a greater educational value. Where a positive on paper may be seen and admired by dozens, the same picture, when projected upon the screen, can be seen and admired by hundreds. Where the one imparts its lesson to the few, the other instructs the many; therefore of a lantern slide it may be truly said, "It gives the greatest pleasure to the largest number." I do not profess to teach you a process. There are many here who are far abler exponents of the different processes applicable to the production of lantern slides than myself, by whom practical information will be ungrudgingly given—*The British Journal of Photography.*

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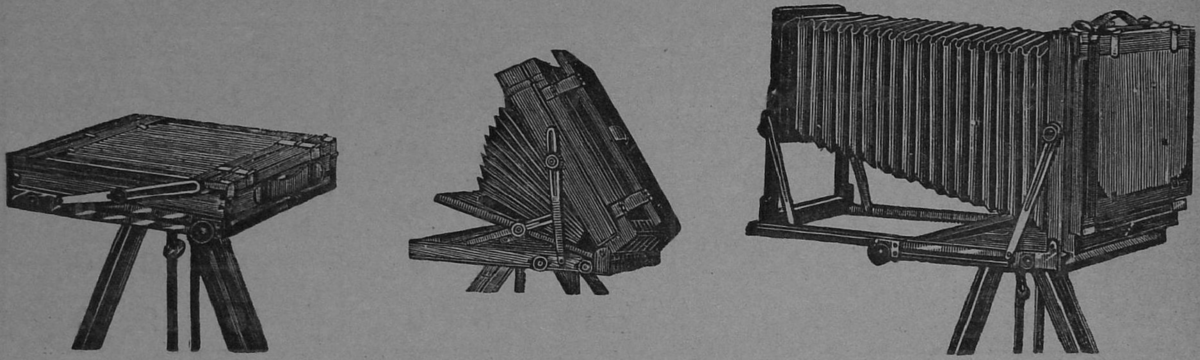

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